```
   1 ggaaggagca ggaggcagcc caggcggagc gggaggagct ggcagcgggg cgcatgccag
  61 gcggggtcc tcaggcgcc ccagccgccg ccggcggcgg cggcgtgagc caccgcgcag
 121 gcagccggga ttgcttacca cctgcagcgt gctttcggag gcggcggctg gcacggaggc
 181 cgggctacat gagaagctcg acagggcctg ggatcgggtt cctttcccca gcagtgggca
 241 cactgttccg gttcccagga ggggtgtctg gcgaggagtc ccaccactcg gagtccaggg
 301 ccagacagtg tggccttgac tcgagaggcc tcttggtccg gagccctgtt ccaagagtg
 361 cagcagcccc tactgtgacc tctgtgagag gaacctcggc gcactttggg attcagctca
 421 gaggtggcac cagattgcct gacaggctta gctggccgtg tggccctggg agtgctgggt
 481 ggcagcaaga gtttgcagcc atggatagtt ctgagaccct ggacgccagc tgggaggcag
 541 cctgcagcga tggagcaagg cgtgtccggg cagcaggctc tctgccatca gcagagttga
 601 gtagcaacag ctgcagccct ggctgtggcc ctgaggtccc cccaacccct cctggctctc
 661 acagtgcctt tacctcaagc tttagcttta ttcggctctc gcttggctct gccggggaac
 721 gtggagaagc agaaggctgc ccaccatcca gagaggctga gtcccattgc cagagccccc
 781 aggagatggg agccaaagct gccagcttgg acgggcctca cgaggacccg cgatgtctct
 841 ctcagccctt cagtctcttg gctacacggg tctctgcaga cttggcccag gccgcaagga
 901 acagctccag gccagagcgt gacatgcatt ctttaccaga catggaccct ggctcctcca
 961 gttctctgga tccctcactg gctggctgtg gtggtgatgg gagcagcggc tcaggggatg
1021 cccactcttg ggacaccctg ctcaggaaat gggagccagt gctgcgggac tgcctgctga
1081 gaaaccggag gcagatggag gtaatatcct taagattaaa acttcagaaa cttcaggaag
1141 atgcagttga gaatgatgat tatgataaag ctgagacgtt acaacaaaga ttagaagacc
1201 tggaacaaga gaaaatcagc ctgcactttc aacttccttc aaggcagcca gctcttagca
1261 gtttcctggg tcacctggca gcacaagtcc aggctgcctt cgccgtgtgg gccactcagc
1321 aggccagcgg agatgacacc cacaccccac tgagaatgga gccgaggctg ttggaaccca
1381 ctgctcagga cagcttgcac gtgtccatca cgagacgaga ctggcttctt caggaaaagc
1441 agcagctaca gaaagaaatc gaagctctcc aagcaaggat gtttgtgctg gaagccaaag
1501 atcaacagct gagaagggaa atagaggagc aagagcagca actccagtgg cagggctgcg
1561 acctgacccc actggtgggc cagctgtccc tgggtcagct gcaggaggtc agcaaggcct
1621 tgcaggacac cctggcctca gccggtcaga ttcccttcca tgcagagcca ccggaaacca
1681 taaggagcct ccaggaaaga ataaaatccc tcaacttgtc acttaaagaa atcactacta
1741 aggtgtgtat gagtgagaaa ttctgcagca ccctgaggaa gaaagttaac gatattgaaa
1801 cccaactacc agccttgctt gaagccaaaa tgcatgccat atcaggaaac catttctgga
1861 cggctaaaga cctcaccgag gagattagat cattaacatc agagagagaa gggctggagg
1921 gactcctcag caagctgttg gtgttgagtt ccaggaatgt caaaaagctg ggaagtgtta
1981 aagaagatta caacagactg agaagagaag tggagcacca ggagactgcc tatgaaacaa
2041 gtgtgaagga aaatactatg aagtacatgg aaacacttaa gaataaactg tgcagctgca
2101 agtgtccact gcttgggaaa gtgtgggaag ctgacttgga agcttgtcga ttgcttatcc
2161 agtgcctaca gctccaggaa gccagggaa gcctgtctgt agaagatgag aggcagatgg
2221 atgacttaga gggagctgct cctcctattc cccccaggct ccactccgag gataaaagga
2281 agaccccttt gaaggtattg gaagaatgga gactcacct catcccctct ctgcactgtg
2341 ctggaggtga acagaaagag gaatcttaca tccttctgc agaacttgga gaaagtgtg
2401 aagacatagg caagaagcta ttgtacttgg aagatcaact tcacacagca atccacagtc
2461 atgatgaaga tctcattcag tctctcagga gggagctcca gatggtgaag gaaactctgc
```

FIG. 1A

```
2521 aggccatgat cctgcagctc cagccagcaa aggaggcggg agaaagagaa gctgcagctt
2581 cctgcatgac agctggtgtc cacgaagcac aagcctgagg agtgacggga tggggagggg
2641 aggtgggcca ccatgtttgg acccgggggg ctgctcttcc ctcccccgcc atagctaaga
2701 tgcctgaatc aattacggag atacagagcc ttgaggtctt tcagtggaaa ggtggttcat
2761 gttcattctc atcagtgtga aactgaggag tctgcaattt ggaatatgga gagagagact
2821 gatttgctga atttccttct aaatgtcact caaaaatttc ttttccatgt cattcttggg
2881 aatgtcttcc acaggatttg agaatagttt catctcagcc cccattagag agaagttggg
2941 gtgaattctg gaaaaatgtc tcttttttcct gtgccatttg ccttctgctg caacgaaaat
3001 atttcctgat tcaagattct ataaaaagga aaccaagcat aagactctgt catcatacct
3061 gttacacgtt cctacaggtg cacaatctaa gagagctaat taacctcaga gtctggagtt
3121 aacagctttt caccttactt ctcctgtgat ctaatattat cttagaaaaa ttaatatgca
3181 atttccaaaa gatattttgg taagacaaca acctcccagt gatatgccac ctttcaattt
3241 tccttttgtg gcaatgattg catctgaaga aaggatccct gagagtctct gtttcatcag
3301 gacattctga aatttaccca cagtgaggct gtggatggat caggggacct gtataaaatg
3361 tttgagcctg ttccattttc ccgtggaacc tgtttcactc aatgccaggc agtgcagcat
3421 ttaggaaagc agtgcagtac tcagtaaggc agtgcagtac tcagtaacac aatacagtac
3481 tcaggcagtg cagtactcag taagacagtg cagtgctcag taaggcagtg caatactcag
3541 taacagtgta gtactcagta acagtgaagt actcagtaat acagtacagt attcagtaag
3601 gcagtgaagt actcagtaat acaatacagt actcagttag gcagtgcagt actcaggaat
3661 gcagcacagt actcaggcag tgcaatactc agtgcggtac tcagtaacac agtgcagtac
3721 tcagtaacag tgcagtactc agtaacagtg cagtactcag taaggcagtg cagtactcag
3781 taacacagtg cagtactcag taatacagta cagtactcag taaggcagta tggtactcag
3841 taaagcaatg caatgctcag taacacagtg cagtgctcaa taaggcagtg cagtgctcag
3901 taaggcagtg aattgcttag taacacagtg tagtgctcag taggacagca tagtactcag
3961 taacacaggg cagctagtac tcagtactat aagtactgag tacttatata ggcaatgtag
4021 tactcagtaa atcagtgcag tactcagtaa tgcaagggca tttcaggctc ctgctgggct
4081 gcttctttgg cccagctggg actcctattg agacagctgc aaaacaggct gatttcaatt
4141 aggcagcact tcccaaagtg cactgaggaa ggtggcccca agagaagctc tctaaacaaa
4201 ggagtaccct ctctggtcaa gtacctttgg taaatacacc ataccataat atctgcttgg
4261 agaaccacaa tgcacattag catattagtc tgagagagaa cttatagtaa ggaaactcac
4321 ttgattttat ctaacctcaa actttccaag tttaatggat cgtgaatttt tttcatgtaa
4381 ctcctattca tatcccatag atctagtatt gtacagcact gcattctctg aggaagtccc
4441 agtccaaact ctgatttaca tcactttaga aaccacactc acacttttgc agagtgttga
4501 gcttaataac tacctgccac agattggtaa atttaatcca gtggttgttc tgtttgtgct
4561 tctgttctca tttatgtgtt tagggatagt gaggttcctg ccttcactag gatccacgga
4621 tatgagacca tttttgtcat ttcctgaagt cacactggcg tttccagaag gcatctggtg
4681 ctttgctcag ccttccatgc tgtgcagcac ttctgtcctc agtcaaggag atggccatgc
4741 ttaagccagc aattggctgg ggtccaggaa acaaagcaaa agcacaatat gtgaatgtgc
```

FIG. 1B

```
4801  tgattgtgtt  ccctatggct  ttatctcgag  caaaatacac  tctacatatt  ttaataataa
4861  gtataattag  cttgttcctg  gacttcattt  tcaatgatga  accaaattcc  tgaattattt
4921  ataattgtgt  ctaaagaaaa  ttatgaactg  gtcacatggc  acttggaatc  cttgagttaa
4981  ttccagtgaa  gcaaaacttg  ggaagagtca  ggattggcca  cattgccaat  aacaaattcc
5041  tacttcgaca  tatgtctttt  caaaaagcct  cccagacaca  agacatctta  accgtcacta
5101  gcccaagtgt  tttgtattac  tcagacacca  tcatgaaata  attctgtgag  gtcatgatgt
5161  atttgaaaat  tctgcaagtt  aataactgcc  ttgaattgtt  tgaacccgaa  ataagggttc
5221  tttggtacct  ctagtagata  gtgtgttcat  ttccctgctg  caaattttga  agtatttggg
5281  caggtgagtc  atgttttaac  cacaagccat  aactcatctg  ttgtctttgc  ttggtcttag
5341  agtatcattc  agaaagtccg  ctaagggcca  gcgtgcttct  tctggctaca  caaccttctc
5401  aggacaagcc  cactgtctta  agccactttg  accctgggag  acacaggact  gtgtatcctc
5461  aatcatacta  tacagcagtt  tttgtcaggg  gaacataaaa  atatccaaga  gaggttaggg
5521  cttagattta  aaagcatcaa  aacaacaaca  atggaaattt  atgttggcga  tagccaagac
5581  cacaagcaaa  agcacatact  ggaaatgatg  agttagaatc  tgatttgact  gggatgtttt
5641  atgagaatgt  aagtgtgata  ttatactgtc  tgccttgctg  gaatgctggc  tttcaaatgg
5701  tcacccattt  ttctttcact  ggcctgagtt  aggacatgct  atcagtaata  gtcccagttc
5761  catccaactt  tctgaaattt  cattttttt  tttgagatgg  agtctctctc  tgtcacccaa
5821  gttggagtgc  agtggccccg  caatctcggc  tcactgcaac  ctctacctcc  caggttcaag
5881  ctattctact  gcctcagcct  cccaagtagc  tggggttaca  ggcatttgcc  accgggccct
5941  gatgattttt  gtatttttag  tagagacagg  gcttcaccat  gttggctagg  agggtctcaa
6001  actcctgacc  tcaggcgatc  cacccccacc  tcggcttccc  aaagtgctga  gattacaggt
6061  gtgagccacc  gcacccggcc  aactttctga  aatttcaaaa  ctgaattgat  ccttctccaa
6121  attagtatat  actattggaa  acttgtcttt  ccctgcagta  aggctggttt  ccccaccccca
6181  gaaacatgta  acggttggta  ccatgctaag  cccttgccat  gctaagccct  ttacagtcat
6241  atcctataat  ccccatatca  accttataag  gaaggtgttt  gtagatgatg  caactgagcc
6301  ttaagaggac  taattcccctt  tttctaaggc  acagagctgg  taaaatgtga  agtaatagtg
6361  aacctaacag  tcagagacag  gcagcatgct  cttaactagt  gctcttccta  aagttccttt
6421  aatgtccttt  tgagattttg  agccatggaa  cttacttgtt  cacctggcta  agaactcatg
6481  gccactgtgg  aaatcttggt  tagggagtca  aagaaactga  gcctggggca  aacgaggctt
6541  cccacactgc  caggggagcc  tcactgtgaa  gtctaggctc  agacaggcat  caacaaacct
6601  attcacccca  ccatcatcct  gatctaacca  ttccccagtc  atcccaggaa  aaccactcac
6661  agcctgacac  tgggctgact  ttcttgaaga  tcctcatcca  attggtgttt  ttcagaagtg
6721  ttccaatatt  atgaattctg  tgttgtggag  aaaagcaacc  atgcatttac  tggtcaatgc
6781  cttcttgtat  atgtaattca  atacttttac  ttttaatatc  ctcaccttat  ctaatctttg
6841  aattttgtca  tgtaatttat  tgcttcatta  aggttacttt  ttgttataca  aaataaaagc
6901  tgatatccaa  ggcaaaaaaa  aaaaaaaaaa
```

FIG. 1C

```
  1 mpgggpqgap aaagggqvsh ragsrdclpp aacfrrrrla rrpgymrsst gpgigflspa
 61 vgtlfrfpgg vsgeeshhse srarqcglds rgllvrspvs ksaaaptvts vrgtsahfgi
121 qlrggtrlpd rlswpcgpgs agwqqefaam dssetldasw eaacsdgarr vraagslpsa
181 elssnscspg cgpevpptpp gshsaftssf sfirlslgsa gergeaegcp psreaeshcq
241 spqemgakaa sldgphedpr clsqpfslla trvsadlaqa arnssrperd mhslpdmdpg
301 sssssldpsla gcggdgssgs gdahswdtll rkwepvlrdc llrnrrqmev islrlklqkl
361 qedavenddy dkaetlqgrl edleqekisl hfqlpsrqpa lssflghlaa qvqaalrrga
421 tqqasgddth tplrmeprll eptaqdslhv sitrrdwllq ekqqlqkeie algarmfvle
481 akdqqlrrei eeqeqqlqwq gcdltplvgq lslgqlqevs kalqdtlasa gqipfhaepp
541 etirslqeri kslnlslkei ttkvcmsekf cstlrkkvnd ietqlpalle akmhaisgnh
601 fwtakdltee irsltsereq leqllskllv lssrnvkklg svkedynrlr revehqetay
661 etsvkentmk ymetlknklc sckcpllgkv weadleacrl liqclqlqea rgslsveder
721 qmddlegaap pipprlhsed krktplkvle ewkthlipsl hcaggeqkee syilsaelge
781 kcedigkkll yledqlhtai hshdedliqs lrrelqmvke tlqamilqlq pakeagerea
841 aascmtagvh eaqa
```

FIG. 2

```
   1 ttgtggaaag gatggatggg tgggtggatg gatggatgga tggatggctg gatggatgga
  61 tagaaatgca acttcaagat ctggttctac agtattacat atgaagcaac tgagactcag
 121 ataaaattca gtgagttgct gaagactatt cactcattga gcctcacatt ctgatgctat
 181 atatatcagg tgctatgcag atgattaggg aagggcagga ctgagattaa actgacaccc
 241 cctacatcct aatccaggct ttttccactg tatggcgatg cctcccaaaa gaattatcac
 301 agcgacttaa taaaggaggg agaaagttag ttgcaaattt caagcttaga aattcacagg
 361 caaaaatggc tgaagggaaa taatcacact aatagtgatg caaggatgta actggaaagg
 421 aaaaaatgga gagaaattaa aaacacaaac agatttagtc agggtcctga taaagtgata
 481 atgtaatcaa taaggcaaat caaagataaa tgattagaga tttaaaactt cagcctatca
 541 gaaaaacctg agggaaaaga tttttgaattt tttttatttc ttccaaaaga tcctatttga
 601 catatttttt taaatctaaa tgaccaaaga tttcgaattt ggaaaggcag acacatatct
 661 atttcccata taaacatcta catttcttgc cacatagcac cgcaacactc atctggttcc
 721 aaagcagacg gcttggccct ctgttatcaa gagcactatc accgttctgg cccggagagc
 781 taagttttct tatacatagg tcgtagccaa agctcagagg aaagaagtga catttggtga
 841 gtgtacagga tatgttctcc agccactttt taggtgctaa gttacatctt gaaataatgt
 901 cagaaattgg aagatgccgt atttaaactt cactagccca agccctaatt cacctcgaca
 961 gtttaatatc ttaatgtttc ttaaaatttg aggactctta gaatgacccc tttaaaaatc
1021 tgctgaaaaa ctggatcttt ttgtgggaaa aactgtccat acctacatat ctaaaatgtg
1081 tatgtggttt cagtctctcc tgtgcacagt ccctcctgct ttgaagggat ccccaacatg
1141 tttttttcct agaggtagtt ggtcacaacc atcggataac atgcttatca cctgggtgat
1201 aaaatattct ggacaccaaa ccccgatgac atgcaattta cctatataaa gaacctgcac
1261 atgtattcct gaacctaaaa taaaaagttg taaaaaataa taatacaagt aaaagagctt
1321 tctgcatgtg ttataaatct gttcaggagg actttccact atgctttcaa gagaagtgtc
1381 ttgaagaatt tagcatcact ctgaattccc aaaaagctct gtgcttttca aggtgctttt
1441 gaggaagaag gatgatgctt caactgtctt ctttgctgtg acttctagga agttcattat
1501 cacatcatat tctcaaccaa ataattaaca cttgacattg gcattttctt ctgtctttgt
1561 ttttaaattt tattgttgtt tgctaatttt attgttttta tctttgttgt atgtattgtc
1621 ccggctctcc atttcctccc tctccctgcc aataaaagag acccatagat tttattcttt
1681 tgttctactt tttcatcaat gtttcttcta catatatctg acatatatgg aaaaaagaat
1741 tactgcctat atatgcagaa cttgtaactc acaggatttc taaactaaaa gacttttctt
1801 aataggtgtg aagtgaaatt ctgcaagtag ctgcatctgg gaacttcaga gttaaaccga
1861 tatctcagta taatctgtca ctgctatagt ttcttttctt tgacctccaa accttatgtt
1921 gaaatttgac ccccaatgtt gaaggtagag cctaatggga ggtgtctggg tctgggggca
1981 gatccctcaa gaatagcttg gtcatcaatg agtgagttct cactctaata gtttctggga
2041 gagctggttg ttaaaaagag tgtgtcatgt cccttctctc tcttttttgct tcctctctca
2101 ccagtgatct gcctaggcca gctccccttc atcttctgcc atgagtggaa gcagcctgag
2161 gccctcacca gaagcagatg ttggcactat gcttcttaga cagcctgcaa aactgtgagc
2221 caaagaattc ccttttcttt ataaatgacc cagcctcagg tattcctcta tagcaacgca
2281 gatggactaa gacactcatg cttcctttca ttagctattt caagctcaaa aattgtgaga
2341 ctgtgccaag aattagggca ggatcttgtc attgagaact tacaactttt ctatctaaag
```

FIG. 3A

```
2401 caaaaggtcc taatcccaaa ccataattgg aaaggtgcct ctactccaac ctcattgccc
2461 ttcaactgcc ccttctctgc ctcccattcc cctcttactc accgaaagac aaatgagttt
2521 aggctgggca cagttagcca tcgttctcag aaaaacaaaa tcttgctgct tggtattctc
2581 acttagaatc ccttcactta gcttatggat caccctacac agattcctga cagctcactg
2641 ggccatggaa ccagccagat ttttgagcta catctgcagt atctttttcta ctcaggcagc
2701 tggcataagg tgggaaaatt cattaacatg ctaatgatgt cctatttaaa attctagtcc
2761 tgattattct gtgattaaat ctctcccctt gacgtcggtt tcctttatag ctgagttaca
2821 gtgcgaaatc aacaatatta ataaagtaca atacagatta ccaatttata cacaagggat
2881 ggtgaaaaac tgctgcgtaa atctgagggc tgtcctttta acttgaaaag cagttgtagg
2941 ccgggcgcgg tggctcacgc ttgtaattcc agcactttgg gaggcctaag caggtggatc
3001 acctgaggtc aggagtttga accagcctg gccaacatgg tgaaacccg tcactactaa
3061 aaaaatataa aaattagctg cctataatc ccagctacct gggaggctga ggcaggagaa
3121 tcgcttgaac ctgggagacg gaggttgcag tgagcagagt tcgcgccatt acacttcagg
3181 ctggttgcaa gaagcaaaac ttttgtctca aaaagagaat gtaaaagcag atgtagcaaa
3241 cttgtaaaag ttgctgattt ttttcattcc gcccttcttt aaataaacac acacattgga
3301 atccacaata attaaatgtt tatagttaat ttccataaat attcaaggct tggaagatag
3361 atttagcttt tcattctatt tcactgcact taacattgct ccgaattcaa atgtgttatc
3421 ctgaagtctc aagaacagct gacaggagtt aaagcacact tgtttatcat ctctttatag
3481 agattgtgtc ttggcaacaa aagccaatgg attcggtgat gaggtctgtc tccctttgcc
3541 cttgagtacc ttggcatatt tcagttcctt ttctatcacc gtattgttct attactgaca
3601 ctccaaactg aatatccaac tcagacaact caagcacctt ccaagaaaga caaacttatc
3661 actaccctca ttaatttgga aaatgaataa agaagcagaa gattcaaggt ccagatctgc
3721 aatctaaaat gcaggaagag aggactcatt catgtgtcat tttaacatct ggccccagta
3781 aatgaacaaa tattgatggt atagtatatt tactatttta aaagacatca tgctggacac
3841 caaagcagta cagtgaaacc taagaacaat gttctgacct cggtggactc acaatctagc
3901 cagagacaca agatacaatg atattttaag tgatgcatgc agcaaattca tctcaggtgc
3961 atcattagag atacacttca catcattaaa aggtctctgt acgagagaca ctgctaattg
4021 ttccctaaga ctgcaaatct ccccttttgc tatggaaaca gaattcatca ctttagtggg
4081 gcacattgct gcccagggta aggacagctc ccagcccctc ttgcaagtag ctgttaccat
4141 ataacaaggt taaggtcaca gggatgtggc cgtagcagag atgtgtgcag atttctaaaa
4201 gcgtacttaa aggggataga tgagctctct tccttctttg tttttttttct gactggactt
4261 ggacatgcat gtggctgggt cagccaggtt ggactgaatg gcacatgttg tggggcagag
4321 aagaacaaga tagaagagtc tgggttcctg acaagcaggg tggcttgatc atccatgagt
4381 tgcctttttc ccctgaacgc tgcattccac aactattgtt ggaaatcaaa atcttttttt
4441 aagaatacta catattgctc atttcttaaa tggtttcatt ctctaaggct aaaaagagtc
4501 atggtacatg catgcatatg tgtatgtgca taagtacact ctcctttgta ctttctctac
4561 atttaaactt gaacacagag ctccctctga atttttaacc ctcaaacac aaaaaaagct
4621 gaatatggac tttgccccag ttttatcaca ttttaataaa taaaagcttc aatgtattca
4681 ggaattcatt atttatttgt ttcccacact ctcaacccta gattattaat ttggttcacc
4741 taaagccaac tcacctcaaa ttggttaaaa aaaattaagc acgtgtaaat caatgtatag
```

FIG. 3B

```
4801 ggaaagggtg gctgatccag caaaatccaa gtgtaaaaac ataaagagag gcttcacaac
4861 agtaatgagc catctgcaat ttagaatcat ccatggtaac aatctctcat tccatttgtt
4921 tatgttttat tcatcattgt gaaaatactt agtgaagtga caatgatgag attcaaaaat
4981 actgcatggt tcttttttta aaaaggatat taatggcttt cagggactca actattcaaa
5041 tgaaaatatt gctggactaa atttgctcaa atttgttcac ttcctcttca ttcttggata
5101 taatatattc ttcattttat gacaaaaaac tatgtggtga aaacatgaga aattccgtag
5161 tttccatcgt ttatacattt aaaaaatcaa tagcagaaac ctatttcaaa tgtacaatcc
5221 tcattcctat catgacagag taaaccaggc tgcggtgtct tgggtgagcg tgttgtcatt
5281 ccctagtact acagttattt agcctcaaac gtactgtctc tagttacata tatggcaaaa
5341 acaaggcttg acctttaaga atgaaaagaa aaaaagataa gtactgagct gttaagccaa
5401 cttaagggta ttcattacaa agaagacaga ataactactg aacatactct ttgattctaa
5461 tatctctatg aagaaacctc tctctacaca aattgataga cattttaaaa gaaaatttat
5521 tcatcccaaa ttgatgcact taacttcagc tagctgattt tatatttctc aatctagctt
5581 ataaatacta ctcttcattt acttcaattt acggagtatt tacaaaagcc ctatttcaaa
5641 tctggttcct atcagccccg ttttttctta tttcttctta aataagcata ctttgtaaaa
5701 tatagccatt tattcatata tatatttctt tcatttgttt tagtaaatga catttatttta
5761 ggaaccattt tttaagaaat aagtttttac catctcaatt tgcactgaac cagcgtcttc
5821 tgagaccatc cctctgggtg caaatctcag agtaagctca gttactccta acgactggaa
5881 aaggaaagaa cacaggaaca cttgaactcc tctgacaagc agacactttg gctaaggcgg
5941 cattcacatc ttctacatca tccttcctgg ggaaagaagc tctcagaaaa gtccacacat
6001 agaagagcca ctttatggtc ttccctcaat tttctcagat cagcctgatt tagtctatga
6061 ttgtgcasac aaggagacgg agccaaggga caaaggaag ataattgtca cacaaagaaa
6121 atgctcaaga ccttgccaag ggagagactg ctctaaataa taacaaggct attagcaaac
6181 acaggttgag acagggaaca gaaaaagaaa agatgtcwca tgtgaatatg aaaacaaaag
6241 ctgacaagtw attccattca gtttgccaag gcacctgcca aaaatgtccc caagggaaaa
6301 gggccatgtg ctccatgacg ctcttcacag tgaacgttca catwaaggca cagaacattc
6361 tgcctggcca caaaacacaa caaatatcat caatatcttg ccggggtaac agttgtgcac
6421 tacctaccat aggcagtctc ctggtgctcc acttctcttc tcagtctgtt gtaatcttct
6481 ttaacacttc ccagcttttt gacattcctg gaactcaaca ccaacagctt gctgaggagt
6541 ccctccagcc cttctctctc tgatgttaat gatctaatct cctcggtgag gtctttagcc
6601 gtccagaaat ggtttcctac agcacgttgt gggagagaag aagggaaaac aagctttaca
6661 gcatccacac acatggaaga tctagcagca gctaatgtac attcacagca tgggcaaaga
6721 aactgcactt tgagattatg twcaatttcc ttagcagtcc tctggggaaa gaacctggaa
6781 aaatattgct cccctttaaac tggaaaaatc accgtctttt ttatcacctt attcttgtta
6841 tgtccatttt aggagttcca ttggtgaagc catctcccgt aaagtatgat gacccaaaaa
6901 tgtcccagtg gaatccagag aaaccacaat gtgtcactcc attccaataa tatacaaatg
6961 tcaaagagat gacatattat agcagtgtgg aaggggactg ggccatataa tcagagttga
7021 cctaaattaa attcctcccc tgttactcaa attgtgtgac ctggagcaag aaaattagca
7081 catctggggc aaatttctta taaaatataa ttgcaataac acctgactca taggtagtta
7141 caagaataaa caagaaattc tgtaaagcac tgagaaaaat atatgataaa ttaaatgtag
```

FIG. 3C

```
7201 caagattgca ggatacaagg tcaatgtaca aacatcaatc ttatgtctaa ataacaaaaa
7261 actagaagat gattttttaa aaaatacaat ttacaaaata ttttaaatct cataatactg
7321 aggggatactt tctttaaata tgtgccagag ctctacagtg aaaactattt ttccaaaact
7381 gctgaaacaa attaaagaca aataatttaa aagatacact gtatacatac actggaagtt
7441 caatattggt aagatttcaa ttttccccac attgattcat tgatttaata taattccaat
7501 caaaatgtta tgaggttctt ttgtagaaat ttatgtgctt attctaaaac gtctaaaagt
7561 gagctgggca tgggtggctc acacctgtaa tcccagcatt ttgggaggcc gaggtggtgg
7621 gtcccttgag gtcaggtgtt caagaccagc ctggccaaca tggcgaaacc ctatctttac
7681 taaaaatata aaaattaatc tggcacagtg gtaagcacct gtaatcccag ctactcaaga
7741 ggctgaggca ggagaatcac ttaaacccag gaggtgtagg ttgcagcgag ctgagatcct
7801 gccactgcac tccagcttga gcaacagagt gagacttcat atctaaacaa ataaaatcta
7861 gaagaatgag cccatgagtt tgaggctgta gtgcactatg attgcacttt tgaacaggca
7921 ctacactctt gtctgggcaa catagcaagt ccccacctca aagaaggaga gggagaaaga
7981 agaagaagga ggaggaggag gtgaaagagg gagggaggga aggaaggaga agacgaagaa
8041 gaatgaagaa gaataggaag aaagaagaag aaggaagagg aggaggagga tgacccaaam
8101 caatccttaa aaagtgagtc ttggtttcaa gactaatgct aaagccacta taaatcaagg
8161 taatatggca ttgaatatac atagacaaac agatcgatgg aatagaataa acagtccagg
8221 agtggattaa cacatataca gccaaccaaa gtgccaaagc aagtcaatga ggaaaagaaa
8281 gtattttcaa taaatggtgc tggaacaact agctatctac atggaaaaaa tattaacctt
8341 gattcatacc tcaaaccaca caaaaattta attaaaggtg gatcacaggc ctacatgtaa
8401 aagttaaaac tataaagctt ctacaaaaaa aaaatgaata tttgattgac tttggagtag
8461 gcaagaactt cagataagat acagaaaaca ctattttaaa aaggataaat gggctttatc
8521 aaaattaaaa acttctcatc aaaagacaca actaaaaaat gagacgacaa gtcacagact
8581 tggagaaaat cattgcatta tgtttaactg acaaggaatt gaatactaca acttgacaat
8641 taaaacacaa atggtgccat tgaaaaatgg tcaaatgact taacaggcat tttacaaagt
8701 agacgcacaa atggctaata agcatatgaa aaaacatttg acatcattaa tcattaagaa
8761 aagaaaaatt aaaaccataa atattccact acaagcccac tcaaatgttt caaattaact
8821 caactaaaaa tgtcaacatt cacaagggta tggagcaact ggaactctca cgcatgtaaa
8881 atggtccctt caagaaaagt tctgccagtt tctcataaag ttcaatgtat acctaccctt
8941 taatccaaca attctacttc caggcattta cacaaaagaa atgaaaacat gtcatcaaaa
9001 atatttgcac tcaaataaat ggtcacagtg tcttatgcct gagagccagc cccatactgg
9061 aagcaaccta aatatccatc agcaggaaga tgcaaaaata atactatagc tatgcaatga
9121 aagactactc agcaataaaa agaaacaaac tcgtcataca tgcagcaaca tgtatgtgtc
9181 tttttctttc tttctttttt tttttttttg agacagagtt ttgttcttgt tgcccaggct
9241 ggagtgcagt ggtacgatct cagctcactg caacctccac cttccagttt gaaactattc
9301 tcctgcctca gcctcccaag tagctaggat tacaagtgcc caccaccacg cccagttaat
9361 ttttgtattt tttagtagag ccggggtttc accatgttgg ccagactgtt ctcaaactcc
9421 tgacctygtg atccacccac ctcagccttc caaagtgctg ggattacagg cgtgagccac
9481 cgcgcccagc caacatgtac atgtctttag aaaagatgca aaagagtagt gccacatgat
9541 tccattaagt tctagaacag ccaaaattaa tccatggtag aagatatcag aacagaggag
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FIG. 3D

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 9601 ggacgatgat gactgggaca agatagggtg ttgtttcttg agtgatgaga ctgttctatc
 9661 tcttggtagg gctgttcgta acacaggtgt caaaattcaa gaactgtaaa cacttaagac
 9721 ctgtgcattc cactgaatat aaaccatacc tcaattaaaa agaggaaaaa ttaagaaatt
 9781 tttaagcatg aacattgaac aataaataaa tatataacat taatgagtgt cccataaatt
 9841 agttagtgtt aattagaaaa ccccactgtg ttttctcaga atttatagta accataatca
 9901 caataatagc tacaaacttt ctcacctttt aatgtcatca caactttagg aaacaggtta
 9961 tatcttatat tattattatt attattatta ttattattat tattatttta cattttaaca
10021 tctctgaaac agggatgtgt cctacaatca ccatcagcca ggaagtggtc aggatgcagt
10081 ggttataact ggattatttt ccctggcctg gctgaccatc tgcaacccc tggtgtttca
10141 atgtacaaac tattttagga ccatctgcgt actggctgtt gcctgaaaat cttgtgttga
10201 tgtggatttg taagactggg aaagcaccag cattcaaaac ttgaagaaag gtgttagcag
10261 tttggcagac aatcctacag aaaactcttt attcttgggg gagaaaaagt tgcctcccat
10321 caacttcaat ggttcacagg atgatgacgt gtggggaaac acaaacctcg acaacattga
10381 gtccaaatgt gtttcggaag actcagaatg aagaagaaga tgccaaggaa aaccttaacc
10441 aatttatttt cctttttaat gagtgatatg tgattttca aaagcctaaa tacatctaaa
10501 agagctatat cagttaagta taagataaaa attctaaacc atagaaagca ctgttactgc
10561 ttaattgaca gcaattttc tttctttgca atgtataaaa taatgggtgc ttttttatgtt
10621 cactgaaatt catattgttg tctcctttta cagctgggaa agcggaaatc tggagaacta
10681 aaatatcttg ctgaagatca caatgcagta aagcatzggg caagtttcca actcgaacat
10741 caccccagaa cacttccttt taaacataaa ttatgttgct aacttttta ttgttactta
10801 gcaggcagat ttcaaactga tacaaatgtt gaaaatgata caaaatgttt tcccaccta
10861 aaggcattct gaaacctagc acataacatc tgtcactgaa gtccatagtt tccaatgcca
10921 tgattggata aagaccctat tgagactcat gtgtttgtct ctcactgctt aaaacactca
10981 tgtgttttaa gcaacatgac aagcacaaaa gagaacaagt actgctcctg ctctccagga
11041 agttaccata aaataaaggg gataaggtgc cttccaaaga aaaccaaat actaggagag
11101 gtcagaggag aagagagatt attccagaag gagagactga ggcagatttc aggagggaag
11161 aatataagag tcccaaaaga agaaacagga acccaggtta gagagcaatg ggcaaggggt
11221 aggaggtgag actaaactca caaggaagtt gcttcaaaac aatagtgccc caaatgccaa
11281 gctgatgggt tggacccatt taggaaaaac ccacaaagtc cacaggagag cagactgcac
11341 ttccatgagc ttcaagctgt aaacagtaac ctcaaataaa acttttcccg gatcggtaat
11401 ttccatcctg aacaatggcc aagtcaagga agctgaggat cgagcccct accgcatgcc
11461 acaaagaacc tcaagggacc ccatgctctg gggagctcgc aggaggacca gcacagaggt
11521 gtgactgcgt tggggcaggg tggccacatg tacaatgttg taccttccaa tgttcctcct
11581 taggctgtgc ttatgaagtc ccaacatgtc ttctgggctg tgttttcaac caagagagtt
11641 aataaaaagt gggatgggca ccaactatgc ctccagagac atcaggcaga atatgccaca
11701 gcgtgccatg tcctcctgca aacagtcaga aagaaaagat ctctaaaagc aaattggaag
11761 agactatata tacagagcga gtgccggtac agaagttttg ctgcaaatac accctctaat
11821 cccttgcaac ccactgcaag ctcgagagac cagtgccctt ggtaaaacac aggagagatc
11881 attaattaaa gcctaggccc tttctttgat cctgagggat aaggcttggg aaaatgcaca
11941 gtgataaaag tgaacatttt aaaagagcag agtgagtgtg aattcccaaa gagaccattc
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FIG. 3E

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12001 atatcaagac ccaagccatg agaaaatgct acaatgccct tgattaatac tttangaggc
12061 attttgacct cagatctaat cccatgaggc ttagaccaag accttgcttg atgcagacct
12121 ctctgactgc tgaaattggt caggagctca gtgatgaaaa tttggaaagt caatgctgat
12181 acctgaagaa agtcccatca gagatctgtg acctgaatct tcataacttt cacaggccct
12241 ttctaaatgc caaggaggat gtgtgtggag aagaatatgc cacctatggc atcccaatat
12301 gcctgtgccc gcctgctctt caacaaggga atgaaacctg ggtattctca taggtttttt
12361 aaagcacttg tccacatatt ttattccgca aataacacaa tttaaaattc agctagaatt
12421 tgccattttc tgtcagggtt gtgcatttct tccagtcacc atgacttcct gagatagcca
12481 aaacacaaaa tttaaattgt gtttaaatta aataaacaca atttatgctg aagctgactt
12541 tacccactct gttccaacat tacttatcct cagcatctct gaattcaaat atcagccagg
12601 tgtggtggct catacctgta agcccagcac tttggcaagc caagatggga aggttgcttg
12661 aggagttgga gaccagcctg ggcaacatag caagacccc atctctacaa aaaaattaaa
12721 aaattagcca ggcatggtgg tatgcacctt tagtcctagc tacttgggag gctgaggtga
12781 gaagatcact tgagccgagg agcttgaggt ggcagtgagt catgatcata ccactgcact
12841 gtagcctgag caacagagca agaccccatc ccttaaaaaa aatacctgcc ctctgtactt
12901 catagcacct ggggcatttt gaacagttct tccttcacct gaggtcatta tttgagaatc
12961 caattttaga gactacaatg ctctcattac ttggattgta tcatttaatc ttcccaacaa
13021 tccaggaagg ggagtctctt aatgattgtc cttgatttcc agttaaaaaa tctagaccca
13081 gaggtaacct tgtgaaggtc acagagtttc agagttctaa gatcccatgc ggagattgtt
13141 gaacttgaac ttgtttcttc tgatctcatg tcaataagtg acttagtcaa cacctgggta
13201 gaaatcatca ctaaagtgag aaagcacatg gtgagggga tgaatcctgt gcccacatgg
13261 tccctttcac ctgcccaatc ctcaggcctc tcacctgggg tacccctcac acacatggca
13321 ctttcctgaa ctcatggaca tttcagtttg taacgatcct cctaagatta tctactttca
13381 cctatccaca tttgaactat acttctttag tggaaaaaaa gaaataaagc cagtgctgag
13441 aatgatcaaa ctccagaaat agtagactgc tgtataattt gtcttgcgtg acaccagatc
13501 tttcaaggaa ctgcaagctc aagtgcacag ttaagcaaga tcaagatcta cctttgtctt
13561 tcagagcctt cccttggcga ggtcaaggat atctgctgtg agcctgggct ggctgaacca
13621 aagggcaatg gaggcggcca agaagcccca gccaactgct cccctcccca accccttct
13681 ccctggaggt cccttcagct agaatttgcc attttctgtc agggttgtgc atttcttcca
13741 gtcaccatga cttcctgaga tagccaaaag catttgctgt gagcagagcc ccatggctgg
13801 ctttgcacat caaacatttc agacagccat atatttcata gaatacaagg ggaagataac
13861 actggaccca cagaactttc caacagcttg agaaaatgtg gtgcctggtg actgactaaa
13921 tatacaatcg gacaacagcc aggccatagc aaaagatgga actctgatcc acaaggtgca
13981 gcaactttcc cagaaaacaa taccttacc cacaaaaagc aaccccggaa gctggcctgc
14041 tctaaatcag acctgctgga agccaaattg ctctctagta actatccagg aagctaaata
14101 ataacttctg taacaattga ctcaaaatgt tcaggactgg attaataact gatggcttcc
14161 ctaattttg tccccgattc caacttagga cccaccagag aaagccaaat atggtcccct
14221 gaccaagcac acaggatgtt cgcttctagt gagccgcctc cagcttcccc gcattgataa
14281 cctccaatca gggcacacct gaagccttcg cctttttcca ctataaagct ctcccactcg
14341 tctgcccacc tttgagtctc tgccaaattg caaatgatgg tgtctgactc ccttgctgta
```

FIG. 3F

```
14401 gcaagctctg cataatagct tgtgcttatt ctctttgggt aggtcttcat ttcttttcac
14461 accagatagg catcatcttt gaaaacatct ttactgggtc tcttgtctcc ctcctgcagc
14521 cactgatcta aatcacagac ttttttagaa agagggaaaa tagtaaagaa agaaagcgat
14581 tgagttgatg ctcccagcca ctgtctgtac cctgaatttt gtttttctgc catatgtcag
14641 gtggcctctc ctggaccatc gtcactgttt ctcctgcttc cctgcagctg cagacacagg
14701 agcactgtgt aggtctggcc ttgagcaccc acccacccag tacagagcca gcccctgctg
14761 ttctgaatca gtgcagtgac cacttagaac acagtgccca tgcctctgtg atctgaactg
14821 ctctttccag ttccatacaa tgttaagaac ccacttaaga atgttttaat cattcagtag
14881 tttttcgtgg tatataataa aaaagtgatt taaatacaat ctattttatt ttagattata
14941 tcattagggg ttattttaca aagttacctt taaatactat tgtaaataaa attaataaca
15001 aa
```

FIG. 3G

ID	PAIR	FORWARD	REVERSE	SEQ ID NOS	LOCATION	SIZE
disc01	f2/r2	CATTAGCTGCTGCTAGATCTTCC	TAAGGCACAGAACATTCTGCCTG	50 51	exon9	353
disc02	f3/r3	TTATTCAATTGTGACTGCAGTTGC	CACCTGCTCTTTCACTGATGG	52 53	exon10	280
disc03	f1/r2	GGTATGATGAAACATCACTGAGTTC	CTAAGTCATCCATCTGCCTCTCATC	54 55	exon11	191
disc04/29	f1/r1	GAGCCTACAGCTCCAGGAAG	GAGCATGGTCCCAAAGCACC	56 57	exon11/11'	265
disc05	f2/r2	GAAGCTTCCCTTTGTGTTCTGTC	CGGCAGCACATCTATTTGTTGCCATC	58 59	exon12	297
disc06	f1/r2	GCAGAGGGCCACGATCACC	CATCCCGTCACTCCTCAGGC	60 61	exon13	203
disc07	f1/r1	CATGACAGCTGGTGTCCACGAAG	CAAATCAGTCTCTCTCTCCATATTCC	62 63	exon13	242
disc08	f1/r1	CAGTGTGAAACTGAGGAGTCTGC	CGTGTAACAGGTATGATGACAGAGTC	64 65	exon13	296
disc09	f1/r1	CATTTGCCTTCTGCTGCAACG	CTTTCTTCAGATGCAATCATTGCCAC	66 67	exon13	299
disc10	f1/r1	CAACCTCCCAGTGATATGCCAC	CTGCCTTACTGAGCACTGCACTG	68 69	exon13	320
disc11	f2/r3	CAGTAACACAATACAGTACTCAGGC	CTGCACTGTGTTACTGAGCATTGC	70 71	exon13	292
disc12	f2/r1	CTCAGGCAGTGCAATACTCAGTG	ACTAGCTGCCCTGTGTTACTGAG	72 73	exon13	303
disc13	f1/r1	GTGTAGTGTCTCAGTAGGACAGC	GTACTTGACCAGAGAGGGTACTC	74 75	exon13	297
disc14	f1/r2	CAAAGTGCACTGAGGAAGGTGG	GTGATGTAAATCAGAGTTTGGACTGG	76 77	exon13	311
disc15	f2/r3	CTCCTATTCATATCCCATAGATCTAG	CAGAAGTGCTGCACAGCATGG	78 79	exon13	335
disc16	f2/r2	CACTGGCGTTTCCAGAAGGCATC	CACTGGAATTAACTCAAGGATTCC	80 81	exon13	336
disc17	f2/r2	CATTTTCAATGATGAACCAAATTCCTG	GCAGCAGGGAAATGAACACACTATC	82 83	exon13	376
disc18	f2/r1	CTGCAAGTTAATAACTGCCTTGAATTG	CTCTGTATAGTATGATTGAGGATAC	84 85	exon13	307
disc19	f2/r1	CAACCTTCTCAGGACAAGCCCAC	GTGACCATTTGAAAGCCAGCATTC	86 87	exon13	314
disc20	f2/r2	GTTAGAATCTGATTTGACTGGGATG	CTTGGGAGGCTGAGGCAGTAG	88 89	exon13	295
disc21	f2/r2	GCACATACTGGAAATGATGAGTTAG	ATGCCTGTAACCCCAGCTACTTG	90 91	exon13	334
disc22	f1/r2	CTCTACCTCCCAGGTTCAAGC	GGTTACTACCGTTACATGTTTCTGG	92 93	exon13	342
disc23	f2/r2	GCACCCGGCCAACTTTCTG	CTCTGACTGTTAGGTTCACTATTAC	94 95	exon13	306
disc25	f1/r1	CTAAGGCACAGAGCTGGTAAAATG	GATGATGGTGGGGTGAATAGG	96 97	exon13	292
disc26	f2/r2	AGCCTCACTGTGAAGTCTAGGC	CTATCATCCATACTTCAAAGGAC	98 99	exon13	403
disc27	f1/r1	CACTGCCTTCTGATTTTTAGCTG	GAGGACAAAACACGATGTGCTGG	100 101	exon8	240
disc28	f2/r2	CTCGCTGAGGAGGAAGAAAGGAGC	GGCACGCCCTGACCTACGC	102 103	exon1	316
disc30	f2/r2	CTGTAGTGGTATTGAATTGTGGTTACC	CAGAAGCACTCTCTCCTGGCTC	104 105	exon7	287
disc31	f2/r1	GCCAATGCTGGAAAGGAAACAGC	TGCCAGCTCCTCCCGCTC	106 107	5'/promoter	168
disc32	f1/r1	CATCCCTCCATCTTCTCCATCAC	CACGCTGCTGGAGCGGGC	108 109	5'/promoter	207
disc33	f2/r2	GAGTCAGTTGCCTAGGAGCTTGC	GTGCAGGAAGCCTCCAGGATG	110 111	5'/promoter	279
disc34	f1/r2	CCTATCCCTGAACCATTGCAAGAG	GAAACAGGGCTCCGGACCAAG	112 113	5'/promoter	300
disc35	f1/r2	CTGGGCCAGTAAGATCTGCATG	GGCTGCAGCTGTTGCTACTCAAC	114 115	exon2	285
disc36	f1/r1	CCAGACAGTGTGGCCTTGACTC	ACATGCGGGTCCTCGTGAG	116 117	exon2	318
disc37	f1/r1	CTGCAGCGATGGAGCAAGGC	GCACTGGCTCCCATTTCCTGAG	118 119	exon2	295
disc38	f1/r2	CAGAGAGGCTGAGTCCCATTG	GAGGAAGTCAGTTGAGCCCAGAAC	120 121	exon2	314
disc39	f1/r1	CCAGTTTCTCTGGATCCCTCAC	GATGAAAGAAAATTGGGACATGATGAC	122 123	exon3	246
disc40	f2/r1	CAGTTTCTAAATGTTCTTAGTTTTCAC	CTATGTGGAGCTGAGAGGTAGG	124 125	exon4	215
disc41	f2/r1	GTTCACTACAACTGGAGCTAAGAG	GAGCTATGATTGCACCACTGCC	126 127	exon5	308
disc42	f1/r2	CATGAGGATTTCAGCTTCTGCATAC	GAGCTATGATTGCACCACTGCC	128 129	exon6	291
disc43	f2/r2	CGACCTGACCCCACTGGTG	GACTGCCCCACACCGTGAAG	130 131	exon6	300
disc43	f4/r2	GTTTGGTAGTTCTGGTGCATATGGC	GCATGGAAGGGAATCTGACC	132 133	exon6	327

FIGURE 4